

SOUTH BAY TRS-80® Users Group

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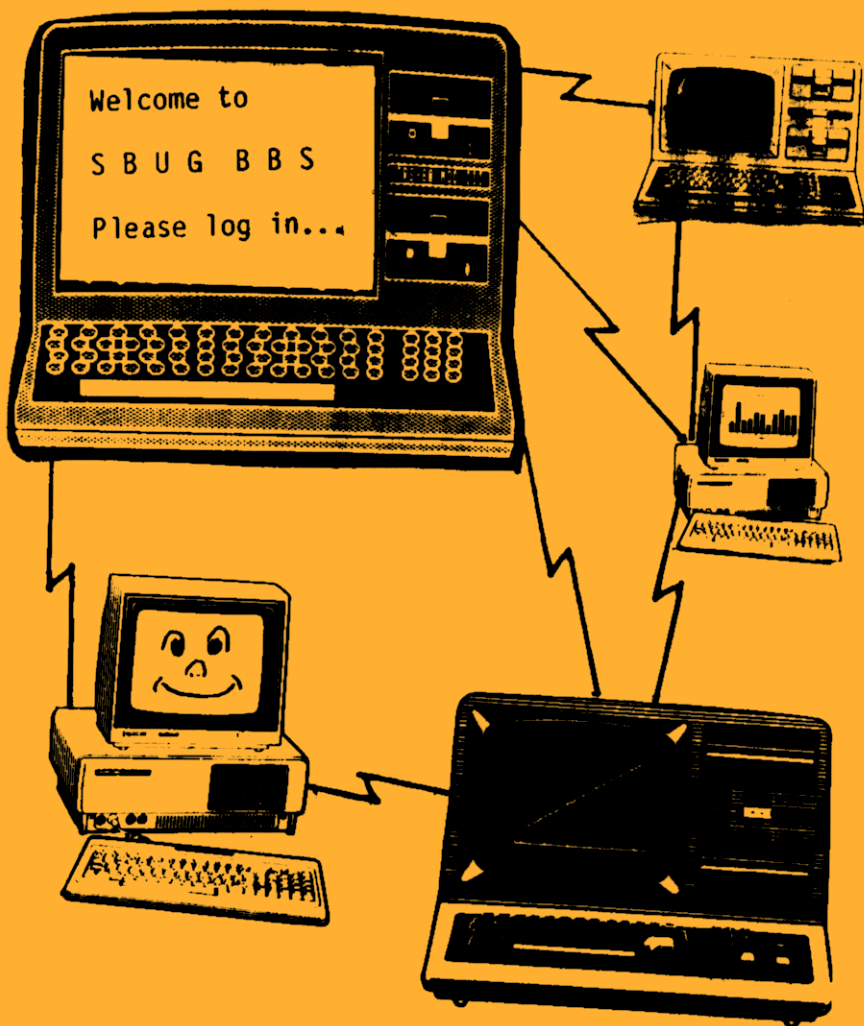


# DYNAMIC MEMORIES

1" Tandy Corp./Radio Shack Inc.

SEPTEMBER

S B U G





## I N D E X

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## \*\*\* NEXT MEETING \*\*\*

The next meeting of the South Bay TRS-80 Users Group is September 17, 1985 at the Cupertino Public Library. Be there about 7:15pm in the Basement Community Room.

## \*\*\* S.I.G. s \*\*\*

At present we have Special Interest Groups in TRS-80 and MsDos (IBM clones and Tandy 1000/1200/2000) computers. These groups are not presently meeting, but converse over the BBS and by voice phone. Contact Don Rhodes for contacting either group.

## \*\*\* MEMBERSHIP \*\*\*

If you wish to become a member of SBUG and receive all the benefits of membership, i.e., newsletter, access to Disk Library and documentation library: Send \$18.00 (check or money order) to:

South Bay TRS-80 Users Group  
Post Office Box 60116  
Sunnyvale, CA. 94088

or come to one of our meetings. If you also wish to communicate with our bulletin board system (SBUG-80) then include an additional \$25.00 (a one-time fee, for life) for an account on the system. You must be a member of SBUG in order to have an account with SBUG-80. Please include your address and phone number.

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## YOUR STEERING COMMITTEE

| MEMBER                 | BBS<br>USER NAME | PHONE                          |
|------------------------|------------------|--------------------------------|
| Discussion Leader:     |                  |                                |
| Wright Huntley         | (Huntley)        | (408) 246-5905 <b>246 3983</b> |
| Treasurer:             |                  |                                |
| Don Rhodes             | (Don)            | (408) 996-1008                 |
| Secretary:             |                  |                                |
| Eric Brewer            | (BREWER)         | (408) 996-3791                 |
| Newsletter Editor:     |                  |                                |
| Joel Lee               | (Editor)         | (408) 926-3999                 |
| Librarians:            |                  |                                |
| Disk - Bernie Thompson | (Bernie)         | (408) 867-7455                 |
| Tape - Gary Dixon      | (Gdixon)         | (408) 262-6937                 |
| Docum. - Pete Fratus   | (Fratus)         | (408) 258-6095 <b>253 6273</b> |
| Sysop:                 |                  |                                |
| BBS#1 - Eric Brewer    | (SYSOP)          | (408) 996-3791                 |
| BBS#2 - Don Rhodes     | (SYSOP)          | (408) 996-1008                 |

If the need arises, feel free to contact any of us.

## Other Key Individuals

Cover Artist - Gerry McKee

## Host BBS Computers

BBS#1 - SBUG-80 [300/1200 baud] (408) 252-0247  
 BBS#2 - SBUG jr [300/1200 baud] (408) 253-6293

==> Visitors are welcome to call the BBSs. Certain functions of the BBSs are limited to visitors.

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The Editor's Bytes and Bits

Our EDITOR, Joel Lee, is vacationing where all good editors go for fun and frolic, down south where the sun and sand meet in the balmy air that pushes gently against the palms. Have a happy, Joel!

Meanwhile, back at the fort here in computer land things are really happening within our club. New and exiting software for the TRS-80 Model IV as reported by our disk librarian, Bernie; New owners of Tandy 1000 have joined our ranks; callers with IBM PC/XTs are visiting our BBS; a couple of our members have been busy building their own MsDOS (IBM clones) computers.

Our second BBS, SBUG jr is getting a good work out with 184 callers in the first month. Wait 'till people know the phone number!! Our BBS#1, SBUG-80, is not doing well. It has been plagued by those little bugs in the circuits that go BUMP in the night. . . Eric is still working on getting it fixed and Gerry McKee has volunteered to get it working this month. Lot's of success to you both!

### Disk Library

The SBUG Disk Library has most of the popular software packages by both Radio Shack and other software vendors on disk. A hand-out sheet is available listing these programs.

In addition SBUG has subscribed to the Micro 80 magazine's LOAD80 disk subscription. These are disk copies of the programs that have been printed in Micro-80 magazine.

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### Documentation Library

SBUG has copies of software operating and user's manuals for most of the popular software programs for the Model I, III and 4 computers. Our documentation library is just beginning to obtain copies of user manuals for some of the MS-DOS programs.

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### o=====o On Telecommuting o=====o by Don Rhodes

If you use your computer to communicate over the telephone line, you are a telecommuter. The telecommuter may call the SOURCE, DOW JONES NEWS SERVICE, COMPU-SERVE, a friend with a computer, interact with the Employer's Main Frame, or dial up a BBS. This is a list of a few telecommuting applications.

Do you remember the first time you added telecommuting equipment to your computer? Was the addition of the RS232C interface card, the cable, the modem simple. Did you forget that you also needed the communications software to make it go into action? For those who are electronic engineers, technicians or all-round mechanics of the electron, this addition of the communication equipment was probably simple.

Those of us that are not engineers probably had to rely on someone at the computer store to guide us through. Once the equipment is installed and the software is working, using it is another matter. The instructions for the software, the instructions for the modem and the multitudes of parameters can be overwhelming, at least at first. Only the strong of heart would take on such an endeavor!

This is the first part in a series of articles dedicated to explaining the world of telecommuting, at least from the aspect of understanding the technicalities. Yes, we will get into how the software works, how the modem works and what happens during a telecommuting session in so far as the transmission of intelligence and control signals.

This series will concentrate on the personal computer used at home and communicating with a CBBS (Computer Bulletin Board Service).

It all started (CBBS) in 1978, when the grandfather of CBBSs was put together for the first BBS and established some communication standards that we use today.

Ward Christiansen and Randy Suess wrote the first CBBS software program. The Christiansen Protocol is the most common text and file transfer protocol in use. It was first used in the CP/M based computers and incorporated into the C/PM XMODEM software.

Protocol, what is it, what does it do, is it really necessary? Without protocol, there is no telecommuting. That's how important protocol is. Every computer that communicates with a peripheral or another computer, uses protocol.

When computers "talk" to their printers or modems, or data links, they use protocol as the commonly understood "language" of communication.

In the world of microcomputing, ASCII is the alphabet for the language of communication. ASCII, which stands for American Standard Information Interchange, represents our English language alphabet in terms which the computer "understands." For each English alphabet character, there is an equivalent ASCII code. For example: the letter "A" is represented by the decimal number equivalent "065" or in hexadecimal form, is "41", or in binary form, is "00101001." Now you may be asking what is decimal, hexadecimal and binary and what has this got to do with the English language and the computer communications "talk?" For the non-programming computer user it is not necessary to understand all this mumbo jumbo. We won't get into the details in the space of this newsletter. It is sufficient to say that for the purpose of this article, that we understand that there are several types of computer alphabets besides ASCII and that ASCII is the target for our discussion here.

Each character in ASCII is represented by a 8-bit binary byte. As noted above, the letter "A" was illustrated as being "00101001" which has 8 numbers all made up of either "0"s or "1"s. Since computers know only how to speak in digital language, everything is reduced down to "off" or "on" states or conditions. The "0" represents the "off" state and the "1" represents the "on" state. By putting together these "on" and "off" states in a 8-bit byte, the group of 8 "0"s and "1"s can be translated into meaningful characters that actually is a form of "intelligence."

Not all computers speak in ASCII, in fact most non-micro computers such as IBM Main frames speak in other byte lengths or alphabet representations.

Now, to expand on the English letter, the next step is to put together these alphabet characters into "words." Words are composed of a collection of individual characters as in the example for the word: "CAT" which is "067", "065", "084" in ASCII decimal form. The word "CAT" is "01000011", "01000001", "01010100" in binary form. Every computer has a translation table and each time the computer has a 8-bit binary word, it goes to the translation table in memory to find the equivalent English letter to display on the screen or print on the printer for us humans. Isn't that nice!

The next step is to tie in ASCII with protocol. We remember that protocol is the language for the computer to "talk" to its peripherals, including modems, screens, printers, drives, etc. This language uses ASCII in microcomputers for its alphabet. This alphabet has the English characters as well as other control characters that the computer uses internally to issue instructions to its peripheral devices.

Each peripheral device was manufactured to use a particular protocol, in our case an ASCII protocol. The modem is designed to use 8-bit binary words (bytes) as well as the printer or screen or drive. When the computer talks to the modem through the peripheral communications channel (computer's serial port address), it sends or receives 8-bit words to or from the modem through the modem cable and the computer's serial interface card. The communication channel basically is just a wire for the transmission or reception of one bit at a time. The other wires between the modem and the computer are all control signal wires. There is one wire for transmission and one wire for receiving. All the others are control signaling and are not always required in every situation. It is possible in most situations to need only 5 wires.

In today's protocol for CBBS, we are using the directive of CP/M XMODEM "CHECKSUM" protocol also known as MODEM7 or Christensen protocol for file transfers. Other types of file transfer protocols are used less often such as DFT or ASCII X-ON/X-OFF.

In XMODEM there are a couple of varieties: 1) XMODEM, 2) XMODEM with CRC checks, and XMODEM relaxed (medium). You should know which are available in your communications software so that you would be prepared to use the proper file transfer protocol in any circumstance. Most often, your communications software manual will not specify which protocols it uses. This is mainly due to their design to only work with the national information exchanges such as Compuserve. When communicating with CBBSs, use a communication software package that does include various kinds of protocols such as MODEM80 for TRS-80 machines or QMODEM for MS-DOS machines.

In MODEM7, the control ASCII words used are:

|       |                      |                |
|-------|----------------------|----------------|
| (SOH) | Start of header      | ASCII 001d/01H |
| (EOT) | End of transmission  | 004d/04H       |
| (ACK) | Acknowledge          | 006d/06H       |
| (NAK) | Negative Acknowledge | 015d/15H       |
| (CAN) | Cancel               | 027d/1BH       |

d = decimal, H = Hexadecimal

These control signals are sent and received over the modems transmit and receive cable leads and are interpreted by the communications software program. These are the same leads used for our standard English text, but are not English letters, instead they are usually unprintable characters.

The transmission medium for this XMODEM protocol is asynchronous, 8 bit, no-parity, 1 stop bit. Usually a communications software program allows changing the UART parameters as:

|             |                                    |                           |
|-------------|------------------------------------|---------------------------|
| baud        | = 110,300,1200,2400                | (600 also possible)       |
| word length | = 7 or 8                           | (5 & 6 also are possible) |
| parity      | = even, odd, space, mark, none/off |                           |
| stop bit    | = 1 or 2                           | (1.5 also possible)       |
| Duplex      | = Full or Half                     |                           |

Please note that the maximum word length is 8 bits. This includes the parity bit. So when using a 8 bit word, there is no room left for the

parity bit. Therefore, when using 8 bit words, the parity is ALWAYS "none."

XMODEM provides for transferring all types of data including ASCII Text files, Binary program files, EBCDIC, etc. This protocol is not limited to the 7-bit limitations as used in strict ASCII text file, X-ON/X-OFF file transfers.

To further cover BBS type communications, the difference between synchronous and asynchronous transmission should be explained. Some modems, such as the Bell 212 type offer both synchronous and asynchronous transmission. BBS transmission is of the asynchronous type. Asynchronous provides a start and a stop bit which surrounds every character transmitted. In other words, every 8-bit byte has a start bit added to the front and a stop bit added to the end. This makes the 8-bit byte into a 10 bit byte between the originating and terminating modems. These two extra bits keep the two ends in sync with each other. In synchronous transmission, the two end modems must be synchronized by special synchronizing signals at the start of the block of data. These are a couple of PAD and SYN characters which signal the start of a frame. The synchronous eliminates the need for start and stop bits for each character.

Additionally, for BBSs, there is one more option in the UART settings for DUPLEX. Duplex must be set at full duplex. In full duplex, the transmission can proceed in both directions simultaneously whereas in half-duplex, the transmission can only occur in one direction at a time.

Echo is one more setting that needs to be set. The host computer must echo the characters received back to the sender in order for the sender to see them on the screen. If both ends have the echo setting turned on, then the characters will be echoed in duplicate, thus having "CAT" look like "CCAATT". If duplex is set at half, then of course echo will not be possible because transmission is unidirectional only.

What does the parity bit do? I'm glad you asked. When a word length of 7 or less is used, the parity bit can be added for error checking. Different error checking schemes have been devised in attempt to eliminate transmission errors with would turn the text into "garbage" or cause a character to be changed into some other character that could even be a control character which possibly might even reset your computer, blank out the screen or cause your cursor to jump down a few lines.

When the transmitting end sends a character, it has counted the number of "0"s for odd parity or it has counted the number of "1"s for even parity in the 8-bit byte and placed the result in the 8th bit place. When the receiver gets the byte, it also counts the number of "0"s or "1"s and compares this to the 8th bit parity value. If there is a mismatch then the receiver asks the sender to retransmit that same character (done by the communications software program, not you.)

For space parity the 8th bit is always set to '0' and for mark parity the 8th bit is always set to '1.' Off/no parity means don't check for parity... ignore the 8th bit.



If you have connected to a BBS or a friend's computer and you are getting lines of text that are not recognisable, check for a parity set up mismatch or word length mismatch, chances are that both ends are not set to the same UART settings.

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To communicate is to have the same understanding by both sender and receiver.

+++ What's New in Computing +++

Prices of hardware are dropping drastically! Harddrives that were \$2,000 four months ago are now readily available for \$700, IBM clones that were \$2500 four months ago are now \$795 in kit form. It seems that the bottom dropped out from the price levels.

Shugart went out of the disk drive business and now only provides disk drive repair. Tandy has dropped the price of the TRS-80 Model IV to a new low of \$795.. and that will probably be reduced more. Recent rumor has uncovered that there is now a new Model IVd which seemingly is a double sided drive computer.

A new software program for MsDOS will convert TRSDOS basic programs into GWBASIC programs, including the hard to convert PRINT statements. Its call "CONV3TOPC" by Educational Micro Systems, Inc. and includes the latest version of Hypercross on the second diskette which is used on the TRSDOS to format an IBM diskette and write the TRSDOS basic program on. That diskette is then placed in the MsDOS machine for the conversion process... price? \$139.95 at the Radio Shack store.

DOSP:US IVa for the TRSDOS computer is completely new with full menu, text editor, linker, assembler, debug and file & disk editing at only \$159.50 includes MSCRIPT / MTERM. MTERM is designed to be compatible with CBBSS.

SUPERCROSS/XT bridges between TRSDOS and MsDOS and C/PM at \$89.95. See the review in the 80 Micro September issue, page 29.

I'm looking for a utility program for my Model III to convert from Dos Plus to Newdos/80 and/or TRSDos 1.3 or Newdos/80 to TRSDos.

One mega-byte memory is now possible for the Model 1, 3, 4 using bank switching.. I know, this is not news.

704k for the MsDOS... AST and Apparent have come out with instructions in their respective manuals that enables PC1 and PC2 to exceed 640 by configuring the switch settings. Refer to PC Post, May 1985.

Epson FX 80/100 upgrade kit for \$100 brings the features found on the new FX85/FX185 models... additional print modes, character sets and new print head with 3 times the resolution (9x5 vs 21x5).

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Keep the editor posted of new developments. Send information to the BBS as a text file or write to SBUG XEditor.

# SPREAD SHEET MAKES A SUPERB TEXT EDITOR

by Raymond Hall, CSRA Computer Society

Most of us employ a word processor or text editor (in preference to the DOS EDITOR editor) to incode program and data statements. But how many of us have used the columnar, macro, 'COPY' and 'DATA FILL' capabilities of the popular spreadsheets to rocket our way through the editing process required with documents that are organized in a columnar format? the incoding of program statements for both Basic and Assembly language routines can be greatly simplified by use of a spreadsheet for such input. The following ideas are based on the use of Lotus 1-2-3, but they apply equally well to Symphony, Enable and other sheets.

As a simple example, consider a program listing given in any one of the major magazines. You would like to use the program, but the thought of the work required to get all the statements encoded error-free holds you back. Not to worry.

Start by setting up a blank spreadsheet with column widths properly adjusted to input the data. The first item on each line will be the program line number. So set the width of column A to 4.

The next item on each line will be the program statement, perhaps followed by a comment. Later on in the program, you may have a data statement, followed by a series of letters and numbers in columns. Set the width of column B to 5, so that the word "DATA" fits into the column. The program statement lines above the data statements will be written as labels in column B, projecting over into columns C,D,E etc.

Set the width of column C, D, E, etc. to match the size of the DATA values. The spreadsheet should be set up to take the following shape:

| A   | B               | C                  | D    | E  | F    | G | H | I | J |
|-----|-----------------|--------------------|------|----|------|---|---|---|---|
| 100 | 'EDITPRG.BAS -- | created            | May  | 10 |      |   |   |   |   |
| 110 | xx xxx xxx xxx  | xxxxx              | xxxx |    |      |   |   |   |   |
| 120 | xxxx            | xxxx               | xx   | x  | xxxx |   |   |   |   |
| .   |                 |                    |      |    |      |   |   |   |   |
| 350 | DATA            | 16,22,AH,35,4A,B3, | 0,   | 65 |      |   |   |   |   |
| 360 | DATA            | 44,31,B2,81,44,    | 0,   | 0, | 0    |   |   |   |   |

Before you start to input information, save a copy of this spreadsheet under a separate name for the next program.

Next, instead of typing in each one of the line numbers and DATA statements, use the DATA FILL command to insert the line numbers in sequence at intervals of 10, starting at column A, row 10 (so that the spreadsheet row numbers and the program line numbers match). Type the program statements as labels in column B. Copy the word 'DATA' vertically into all the appropriate column B slots. Then write a short

macro to enter the data values column-wise. (Remember to use an extra apostrophe for the label and to put a comma after the parenthesis:

```
'(?),-(DOWN)-'
```

Place this macro to the right of the DATA statement, starting in the SAME ROW as the first DATA statement, and copy it downwards to the row of the last DATA statement. Once the macro is invoked, you will insert the numbers and letters a column at a time by simply typing the data and hitting the return key. The macro will do all the positioning work for you. The right-most column will not require commas, so the macro will have to be altered slightly, or another short macro could be written which would edit out the commas after the data is input.

Statements can be altered either before or after the data is entered. You may wish to add comments to the program lines later as well. These comments can be placed in a separate column to the right of the statements, perhaps column 1.

When you have finished getting all the information in, error-check your input by reviewing the program LINE BY LINE (not column by column) by scrolling the lines off the top of the screen one at a time.

Next, export your program text to a print file. Remember to define your print area large enough to catch all of the program statement characters at the top, but narrow enough to miss the macro (you may wish to move the macro after you have finished with it). Before you execute the GO command to print the program range into a file, change the left margin to zero and use the Unformatted Option to eliminate the top and bottom margins.

Finally, save your worksheet before quitting. If you have any errors in the program, forcing you to come back into the spreadsheet, erase the previously printed file BEFORE you come back into the spreadsheet; otherwise, (in Symphony) the next one you print will be APPENDED to the previous one, it will not replace it.

Of course, the above example illustrates only one use of the spreadsheet as an editor. The spreadsheet is advantages for ANY type of editing that is column oriented. I have used this to great advantage in compiling data files for statistics programs. Variations include block copy and move uses (to selectively include or exclude data and/or statements from the print range), as well as rudimentary preliminary analysis, calculations, functions and program editing that is much more easily handled in a spreadsheet than in a dedicated application program.

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## TANDYNES IS NEXT TO GODLINESS (OR VICE-VERSA)

by Joel Lee

Two weeks ago there was a letter in INFOWORD from a certain David A. Beckerman regarding a paragraph that had appeared in previous week in Dvorak's column. That paragraph alleged that John Roach, the C.E.O. of Tandy had become enraged at the premature revelation of the price slash on the Model 1000, and had used a certain word that most of us learned when we were very young.

Beckerman was in high dudgeon at this portrayal of his chief (who is from the tone of Beckerman's letter a proximate candidate for beatitude), and went on to inform INFOWORD that Tandy would no longer advertise there nor in any of the 60 publications that comprise the mini-empire of the parent CW company. It is obvious that said Beckerman has a shiny brown nose. It is equally obvious that this is blackmail with meat axe and broadsword. How does this minor corporate tempest concern us?

First, as Americans who believe in a free press.

Next, if a magazine may be openly blackmailed in this fashion, it limits our sources of accurate information regarding microcomputers etc. Microcomputers are our hobby, and for many of us, our livelihood, or part of it. It should not be possible that a roach enconced in the shimmering, ivory Tandy tower may dictate to us at his whim because he believes that his massive, awesome dignity has been trifled with some sniveling columnist.

This tactic of Tandy's (for a lickspittle like Beckman would never do a thing like this without corporate permission) is reminiscent of Henry Ford, when he said: "let them have any color they want, just so its black." That attitude cost Ford its place as the number one auto maker of the world.

Tandy builds good computers, and they have been more responsible than other manufacturers when they upgraded from the I to the III to the 4. They have also been greedy by not espousing open architecture, and by chivying the small software companies. They wanted to keep it all to themselves. Had they heeded the gamblers chant at the crap table, -- Take some but leave some-- they would not have lost the leading position they once held in the microcomputer world.

All of us will continue to buy from Tandy as long as they give us a better product. They have not yet learned that being good engineers is not enough. They have not learned that part of their job is listen to the public and to accomodate it. If the consumer wants green micros with antennae, the man who makes them will capture the market.

Finally-- Beckman, wipe your nose, its disgusting.

\*\*\*

BBS TALK - Excerpts from the BBS Message center.

Subject: MODEL IV --- END ??  
From: IAN WEBB  
Date Time: 07/21/85 09:56:57

Look at the RS/Tandy ad in today's paper. I think the Model 4 as we know it must have 4 months or so left. I predict a sale at \$599 just before the end!!!!

What do you think??? replaced by a hard-drive 2 processor machine?

Subject: DELPHI MEMBERSHIPS  
From: Bryan Eggers  
Date Time: 08/10/85 09:21:12

I'm managing the Tandy User's Group on Delphi. If anyone would like to join, please leave mail for me and I will give you a special unique password to sign up free. This will save you \$49.95. Delphi is similar to Comuserve, except they don't charge or 1200 baud. we have tons of programs for all Tandy computers. Hope to see you there.  
Bryan Eggers

Subject: Do we need a BBS?  
From: Ian Webb  
Date Time: 08/20/85 17:08:18

Someone chose to erase my previous message about this. What do you think? Hardly anyone seems to use this system. Only three or four different individuals.... Meeting attendance is not at an all time high! Is there any life left in the club? Should we maintain a BBS for two or three or four members? Should we bother with meetings for audiences of 10 or 20? Who is interested? What should be changed? Why bother at all?

Subject: SBUG AND BBS  
From: Mike Wright  
Date Time: 08/22/85 21:44:35

This is the first time I've heard of your users group or your BBS. I'm interested in both since I actively use my TRS-80 equipment, and occasionally like to talk to others about problems or applications ideas. Maybe your interest problem is really a publicity problem. I think the interest is probably out there. People like myself just need to find out about you. Now I know; I'll plan to attend your next meeting. Thanks

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Up coming events...

- Sep 7 - Bay Area Computer swap - 2495 Deleware St, San Mateo  
Sat. 10am to 5pm - \$5.00 admisson
- Sep 7 - Computer Market - De Anza College - 21250 Stevens Creek  
Sat. 10am to 5pm
- Sep 14 - Computer Swap America - Santa Clara County Fair Grounds  
Sat. 10am to 6pm \$5.00 admission

Sep 26 - The Byte Computer Show - Brooks Hall, San Francisco  
..29 Thur - Sun 10am to 6pm \$10.00 (\$2.50 discount tickets)

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For Sale...

Memory expansion board for the Tandy 1000, 384k ready to go.  
Call Jim Gonsolves (408) 241-9947

Needed...

Host program for the MsDOS computer to allow DOS commands from dial-up remote. Call Don Rhodes (408) 996-1008

Graphics program for MsDOS to provide custom designed business forms to be printed on dot matrix and lazer printer. Leave info on SBUG BBS (408) 253-6293, or write SBUG % EDITOR.

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## South Bay TRS-80 Users Group

## Financial Statement

August 25, 1985

| CASH RECEIPTS:     | August | Y-T-D   | % Used | Budgeted |
|--------------------|--------|---------|--------|----------|
| Dues: SBUG         | 36.00  | 1287.00 | 71.5   | 1800.00  |
| Dues: SBUG-80      | 0.00   | 125.00  | 6.0    | 600.00   |
| Disk Library       | 0.00   | 105.00  | 8.8    | 120.00   |
| Load 80            | 48.00  | 136.00  |        | 0.00     |
| Interest           | 3.44   | 27.70   | 69.3   | 40.00    |
| Documentation Lib. | 0.00   | 0.00    |        | 264.00   |
| Total Receipts     | 87.44  | 1680.70 | 59.4   | 2829.00  |

## CASH DISBURSEMENTS:

|                   |        |         |      |         |
|-------------------|--------|---------|------|---------|
| Documentation Lib | 0.00   | 0.00    |      | 80.00   |
| Telephone         | 0.00   | 58.19   | 29.0 | 200.00  |
| Electricity       | 0.00   | 80.00   | 33.0 | 240.00  |
| Disk Library      | 0.00   | 214.97  | 71.0 | 300.00  |
| Miscellaneous     | 0.00   | 0.00    |      | 100.00  |
| Postage           | 0.00   | 118.00  | 23.5 | 500.00  |
| Print / copy      | 107.10 | 886.32  | 88.9 | 1000.00 |
| Bank charges      | 0.00   | 8.00    | 26.0 | 30.00   |
| Post office box   | 0.00   | 26.00   | 50.0 | 50.00   |
| Sbug80 repairs    | 0.00   | 0.00    |      | 200.00  |
| Total Disb.       | 107.10 | 1391.48 | 51.5 | 2702.00 |

|                  |         |        |  |        |
|------------------|---------|--------|--|--------|
| Beg Cash Balance | 498.83  | 229.27 |  | 229.27 |
| Less Recpts/Disb | - 19.66 | 289.22 |  | 127.00 |
| End Cash Balance | 518.49  | 518.49 |  | 356.27 |

Percent of year used . . . . . 72.5

South Bay TRS-80 Users Group  
P.O. Box 60116  
Sunnyvale, Ca 94088

**FIRST CLASS MAIL**